

REMARKS

A. Request for Reconsideration

Applicant has carefully considered the matters raised by the Examiner in the outstanding Office Action but remains of the position that patentable subject matter is present. Applicant respectfully requests reconsideration of the Examiner's position based on the above amendments to the Claims, amendments to the Specification, amendments to the Abstract, replacement sheets 1 and 2, and the following remarks.

B. Claim Status

Claims 1-19 are pending in this application.

All the Claims have been amended herein to place them into more conventional U.S. format and to address the various objections and rejections made in the Office Action.

Claim 1 has also been amended herein to better define the action of the two circulatory channels to apply torque at the same time by having one of the return channels become a loadbearing channel while its corresponding loadbearing channel becomes a return channel. This action of the linear roller bearing is described starting on line 25 of page 12 of the Application. Such an aspect is not taught in the prior art which will be discussed in more detail below.

Respectfully, no new matter has been added by way of these amendments.

C. Drawing Objections

Figure 2 had been objected to for using the numeral 1 twice. Attached is a replacement sheet 2 for Figure 2 wherein the reference character numeral 1 which was drawn to segment 15 has been deleted.

The drawings have been objected to because reference character 25 which appears in the Specification on page 10 at line 5 did not appear in the Figures. Figure 1 has been amended herein to add reference character 25.

The pressed-in portion which is referred to on page 10, line 16 was objected to because it was not indicated to by a reference numeral. The pressed-in portion referred to on pages 10, lines 16 are the ball grooves 19, 20, 23, 24. The word "pressed-in" is used to identify how the ball grooves are formed in the segments which are labeled 15 and 16.

The lead line of reference character 28 had been objected to in Figure 1. Figure 1 has been amended to shorten the lead line for reference character 28 to point directly to the recess. This recess is clearly shown in Figure 2.

The drawings have been objected to for failing to show the limitations of Claim 3 and 8. It is submitted that Claim 3 and 8 are fully described in the Specification starting on page 12, line 25. It is shown by way of "play S" in Figure 1. When inner shaft 2 is rotated, past the critical rotation angle, play S in either the second or the first circulatory channel goes to zero such that the longitudinal tooth 32 causes the return channel to become the loadbearing channel and the loadbearing channel becomes the return channel.

The limitations of claim 14 are illustrated in Figure 1 and Figure 2. The "rest", which is referred to in Claim 14 is the inside of shaped recess 28.

The limitation in claim 19 that the hollowed body is resiliently deformable is clearly disclosed in the specification on page 13, lines 24 - 28.

D. Specification Objections

The Specification had been objected to for failing to include section headings.

The section headings have been added herein.

The Specification had also been objected to because a specific claim was referred to on line 27, page 1. The Specification has been amended to delete this reference.

The Abstract had been objected to for being too long and written in the form of a claim. Attached is an amended Abstract.

The Specification had been objected to because the phrase "rotational angle" in claim 3 was not deemed to have proper antecedent basis in the Specification. The Examiner's attention is drawn to page 4, line 25 which refers to the rotational angle.

The limitation in claim 3 "critical rotational angle" was referred to as having no proper antecedent basis in the Specification. The Examiner's attention is drawn to page 4, lines 25-26 which discuss this critical rotational angle.

Claim 18 and all the limitations therein were objected to as failing to have proper antecedent basis in the Specification. Claim 18 refers to "circumferential section 35" as shown in Figure 1 and is defined by the area between two longitudinal teeth 32. The specific wording for Claim 18 can be found on page 7, lines 23-27.

E. Claim Objections

The claims had been objected to for not having separate line indentations for each element. The claims have been amended herein to have separate line indentations for each element.

Claim 18 had been objected to because the deflection channel referred to by reference characters 5 and 6. All the Claims have been amended herein to delete the specific numerical reference to the reference characters in the drawings. This places the claims into a more conventional U.S. format.

F. Claim Rejections under 35 U.S.C. 112

Claim 1, lines 27-29 had been rejected on the basis that there was no teaching that the first circulatory channel was connected to the second circulatory channel. This passage in Claim 1 has been deleted.

Claim 19 had been objected to on the basis that the Specification fails to teach how hollow body would deform resiliently. Hollow body 13 is the outer profile 1 as shown in Figure 2 and Figure 1. As the torque from inner profile 2 increases through rotation, hollow body 13 can deform outwardly as described in the Specification in the paragraph bridging pages 7 and 8, as well as the paragraph bridging the pages 13 and 14.

G. Claim Rejection under 35 U.S.C. 112, second paragraph

Claim 1, line 25 had been objected to because of the phrase "the opposite direction". Claim 1 has been amended herein to refer to one direction as clockwise and another direction, as counterclockwise.

Claim 9 had been objected to as having insufficient antecedent basis for "the play".

Claim 9 has been amended herein to change "the play" to "play".

Claim 14 had been objected to because "a rest" had been deemed an unknown limitation. The "rest" is the inside portion of recess 28.

Claim 19 had been objected to because of the limitation "deformed resiliently" as used to describe hollow body 13. As noted, body 13 deforms resiliently when subject to a certain amount of torque as described in the paragraph bridging pages 13 and 14 of the application.

H. Prior Art Rejection

Claims 1-19 had been rejected as being anticipated by Watanabe.

Focusing on Figure 4 as attached to the Office Action, the Examiner will note that Watanabe has six circulatory races. The balls of the loadbearing channels of three circulatory races work together with the respective right face of a tooth 2c. The balls of the loadbearing channels of the other three circulatory races work together with the respective left face of the teeth 2c. When shaft 2 of Watanabe is turned in a clockwise direction only three of the circulatory races transmit the torque, namely those balls that bear against the

right flank of teeth 2c. When you turn the shaft counterclockwise, those balls that bear against the left face of the teeth 2c transmit the torque. According to Watanabe, there are therefore in either direction, at any one time, only three races that transmit torque. In other words, each circular race only transmits torque in only one direction.

In contrast, in the invention, each circular race transmits torque in both directions. Thus in the embodiment shown in Figure 1, all four races transmit torques in both directions.

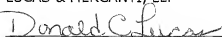
In a direct comparison between Watanabe and the invention, it can also be determined that: in the embodiment according to Fig. 1 of the invention, altogether four circulatory races are provided. High torques can be transmitted in both directions by four races of all circulatory races. In contrast, the embodiment of Watanabe has six circulatory races (i.e. two more than the embodiment of the invention), however, in both directions, only three circulatory races can transmit the torques. This comparison alone reveals that, according the invention, despite a smaller number of circulatory races is provided, more races are available to transmit high torques.

I. Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any extensions of time or fees be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,
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